

ABSTRACT

A current-reusing bleeding mixer capable of providing a higher conversion gain, linearity and lower noise figure employing a field-effect transistor includes a first to a fourth transistor and a first and a second load element. The first transistor amplifies a radio frequency (RF) signal. The second and the third transistor, each connected to the first transistor, receive a balanced local oscillator (LO) signal to mix it with the RF signal. The first and the second load element are connected between a supply voltage source and the second transistor and between the supply voltage source and the third transistor, respectively. The fourth transistor, connected between the supply voltage source and the first transistor, amplifies the RF signal and bleeds a current from the supply voltage source.